

CLAIMS

What is claimed is:

1. 1. A process of roll forming a tubular metallic body for a fluid connector,
2 comprising the steps of:

- 3 i. affixing a tubular metallic body of substantially constant diameter in a roll
4 forming machine;
- 5 ii. positioning a series of freely rotatable independent tools in a
6 circumferential pattern surrounding said tubular body;
- 7 iii. together rotating said series of tools within a predetermined velocity range;
- 8 iv. applying minimal radial contact between said series of tools and said
9 tubular body;
- 10 v. forming at least one annular radial groove in said tubular body;
- 11 vi. smoothing the outer surface of said tubular body;
- 12 vii. decreasing the outside diameter of a portion of said tubular body for a
13 predetermined distance along its periphery at a constant, uniform rate; and
- 14 viii. rounding a proximate end of the decreasing-diameter portion of said
15 tubular body.

1 2. The process as in claim 1 further including:

2 during the forming step, moving material to said proximate end and forming a
3 rounded, rolled-over nipple nose thereat.

1 3. The process as in claim 1 wherein said rotational velocity of said series of tools is
2 in the range of 300-800 rpm.

1 4. The process as in claim 1 wherein said series of tools is comprised of three
2 essentially equally spaced parallel rollers each having at least one protrusion extending
3 from its outer peripheral surface and said minimal contact occurs substantially
4 simultaneously between each of said at least one protrusion and said tubular body.

1 5. The process as in claim 1 wherein said decreasing diameter portion extends from
2 one of said at least one annular groove toward said proximate end.

1 6. The process as in claim 1 wherein said metallic tubular body is fabricated from a
2 5000 series aluminum alloy.

1 7. The process as in claim 5 wherein said decreasing diameter portion has an about
2 2° pitch.

1 8. The process as in claim 5 wherein said at least one annular groove includes two
2 axially-spaced, parallel, substantially similar grooves.

1 9. The process as in claim 1 further including the step of smoothing said tubular
2 body excluding said grooves, said decreasing diameter portion and said rounded
3 proximate end.